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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/585,072	06/01/00	VEXLER	G 736.321US01
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EXAMINER

MMC2/0411

MR MICHAEL B LASKY
 ALTERA LAW GROUP LLC
 6500 CITY WEST PARKWAY
 SUITE 100
 MINNEAPOLIS MN 55344-7701

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ART UNIT	PAPER NUMBER

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DATE MAILED:

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 09/585,072	Applicant(s) VEXLER ET AL.	
Examiner William H. Mayo III	Art Unit 2831	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5, 7, 10-11, and ~~14~~ 15 is/are rejected.
- 7) Claim(s) 6, 8, 9, 12, 13 and 16 is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

DR 4/9/01

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on 05 September 2000 is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 18) Interview Summary (PTO-413) Paper No(s). _____
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other:

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed November 6, 2000 has been submitted for consideration by the Office. It has been placed in the application file and the information referred to therein has been considered.

Drawings

2. The corrected or substitute drawings were received on September 5, 2000. These drawings are not approved.

3. The drawings are objected to because Figures 1-2b and 4a-5b lack the proper cross-hatching which indicates the type of materials which may be in an invention. Specifically, the cross-hatching to indicate the conductor and insulation materials are improperly cross-hatched. The applicant should refer to MPEP Section 608.02 for the proper cross-hatching of materials. Correction is required.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because line 1 contains the term "concerns" which is improper language for the abstract. The applicant should replace the term with the term --includes--. Correction is required. See MPEP § 608.01(b).

6. The disclosure is objected to because of the following informalities: The specification contains the misspelled term "minimise", on page 2. The applicant should correct the term to minimize.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-5, 7, 10-11, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gagnon (Pat Num. 5,841,072) in view of Brorein et al (Pat Num. 5,767,441, herein referred to as Brorein). Gagnon discloses a twisted pair cable (Figs 1-2) for transmitting high frequency signals (abstract). Specifically, with respect to claim 1, Gagnon discloses a twisted pair cable (20) comprising a plurality of twisted pairs (Fig 2) wherein the pairs comprise two conductors (21) surrounded by an inner layer insulator (22) and an outer layer insulator (23). With respect to claim 2, Gagnon discloses a twisted pair cable (20) comprising a plurality of twisted pairs (Fig 2) wherein the pairs comprise two conductors (21) surrounded by an inner layer insulator (22) and an outer layer insulator (23). With respect to claim 3, Gagnon discloses a twisted pair cable (20) comprising a plurality of twisted pairs (Fig 2) wherein the pairs comprise two conductors (21) surrounded by an inner layer insulator (22) and an outer layer insulator (23) defining an outer surface. With respect to claim 5, Gagnon discloses that the inner layer insulator (22) is an extrudable polymer (Col. 3 & 4, lines 64-67 & 1). With respect to claim 7, Gagnon discloses that the outer layer insulator (23) is an extrudable polymer (i.e. FEP). With respect to claim 10, Gagnon discloses that the outer layer insulator (23) is an extrudable polymer (i.e. FEP) which may have flame retardant additives (Col. 5, see Table 2) such as HALFR. With respect to claim 14, Gagnon discloses that the inner insulator layer (22) and the outer insulator layer (23) are foamed (Col. 3 & 4, lines 64-67

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& 1 respectively i.e. FEP is formed by cross-linking with additive to foam it during the extrusion process). With respect to claim 15, Gagnon discloses that the outer layer (23) insulator is larger than the inner layer insulator (22, Figs 1-2)

However, Gagnon doesn't necessarily disclose the conductors being eccentric with respect to the inner and outer insulators (claim 1), nor the conductors being separated by a distance of $S1$ which is smaller than the separation $S2$ of the conductors in adjacent pairs (claim 2), nor the conductors being asymmetric such that the conductors are closer to each other than to the conductors in adjacent pairs in contact at the outer surface opposite the conductors (claim 3), nor the conductors being closer to each other than to an outer surface opposite the conductors (claim 4), nor the outer insulator being an extrudable elastomer (claims 5 & 10), nor outer insulator being an extrudable elastomer (claims 7, 11, & 14), nor the elastomer thickness being greater than 15 % of the overall insulation thickness (claim 15).

Brorein teaches an electrical cable (Fig 3d) for transmitting digital and analog data signals (Col. 1, lines 6-10). Specifically, with respect to claim 1, Brorein teaches a electrical cable (Fig 3D) comprising a plurality of twisted pairs (80) having a two conductors (82) that are eccentric with respect to the insulation (Fig 3D) for the purpose of providing a cable that processes superior transmission properties, including minimal structural return loss, near-end cross-talk, and insertion loss (Col. 1, lines 6-16). With respect to claim 2, Brorein teaches that the plurality of twisted pairs (80) has two conductors (82) which are separated by a distance ($S1$) which is smaller than the separation $S2$ of conductors (not number) in adjacent pairs (see details Fig 3D). With

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respect to claim 3, Brorein teaches that the conductors (82) are asymmetric such that the conductors (second horizontal conductors from left) are closer to each other than to the conductors (fourth horizontal conductors from left) in adjacent pairs (Col. 11, lines 20-38). With respect to claim 4, Brorein teaches that the conductors (82) are asymmetric such that the conductors (second horizontal conductors from left) are closer to each other than to the conductors (fourth horizontal conductors from left) in adjacent pairs (Col. 11, lines 20-38).

With respect to claims 1-4, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the cable of Gagnon to comprise the conductor configuration as taught by Brorein because Brorein teaches that such a configuration provides a cable that processes superior transmission properties, including minimal structural return loss, near-end cross-talk, and insertion loss (Col. 1, lines 6-16).

With respect to claims 7, 10-11, and 14, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable of Norris to comprises an inner and outer insulator made of an extrudable elastomer, since it is well known in the art of cables that extrudable elastomers, such as EPDM, neoprene, and silicone rubber, are commonly used as cable insulators because of their flexibility and there ability to resistance fluid wicking thereby protecting cables for external forces and elements.

With respect to claim 15, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable of Gagnon to comprise

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the outer layer insulation having a thickness being greater than 15 % of the overall insulation thickness, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

10. Claims 6, 8-9, 12-13, and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: This invention deals with a twisted pair cable comprising an extrudable polymer having a modulus of elasticity greater than 64 KPSI at room temperature, a dielectric constant lower than 2.5, and a loss factor lower than 0.0003 between 1Mhz and 1Ghz (claims 6 & 8) and the extrudable elastomer having a modulus of elasticity lower than 35 KPSI at room temperature (claims 6, 8, & 13), a conductor comprising a middle layer insulator between an inner and outer layer insulator (claim 9), and a method of making a twisted pair cable comprising an extrudable polymer having a modulus of elasticity greater than 64 KPSI at room temperature and an extrudable elastomer having a modulus of elasticity lower than 35 KPSI at room temperature (claim 16).

12. Claim 12 is depend upon claim 9 and is therefore objected.

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Conclusion


13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Aprin (Pat Num. 5,563,377), Bolick, Jr, et al (Pat Num. 4,481,379), Adriaenssens et al (Pat Num. 5,162,609), all of which disclose data cables having twisted pairs with inner and outer layer insulations, Berelsman et al. (Pat Num. 6,211,467), Kenny et al (Pat Num. 6,153,826), and Thompson (Pat Num. 6,167,687), all discloses twisted pair conductors being eccentric with respect to their insulations.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30 a. m.-6:00 p.m.(alternating Friday's off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Dean A. Reichard
Primary Examiner